



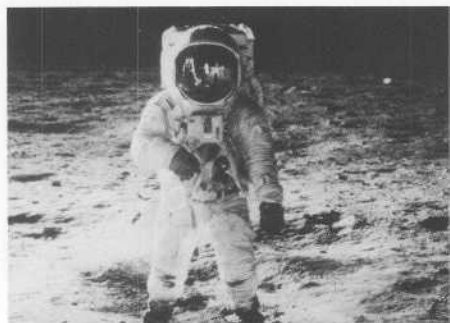
The Corps and the Space Program

Pad 34 control room, Cape Kennedy.



Public Affairs Office, Corps of Engineers

Man on the moon.



NASA

With past experience in missile site construction, the Army Corps of Engineers was the logical choice of Congress and the National Aeronautics and Space Administration to oversee NASA's accelerated construction program in the early 1960s. Using the Corps also eliminated the need for NASA to establish a large temporary construction staff itself. NASA contracted with the Army engineers for small facilities as well as for major projects such as the Johnson Manned Spacecraft Center in Houston, Texas, the National Space Technology Laboratories in Pearl River County, Mississippi, and the Kennedy Space Center at Cape Canaveral, Florida.

On May 25, 1961, President

John F. Kennedy declared a national goal of landing a man on the moon within the decade and returning him safely to Earth. In response, NASA began a massive construction program along the Gulf of Mexico and the Atlantic Ocean, an area called the "NASA Crescent." NASA needed a new logistics system, one that it necessarily had to construct around navigable waterways, because neither road nor rail could transport the gigantic components involved in the manned space program. Waterborne transportation was the only answer. Indeed, proximity to water was a factor in the selection of Houston for a new facility. On September 25, 1961, only three days after NASA requested the Corps'

Apollo launch.

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assistance, the Fort Worth District began arranging preliminary topographic and utility surveys of the site of the manned spacecraft center.

Fort Worth District's experience with incremental funding stood NASA in good stead in the construction of the center. This method of funding is based on the congressional tradition of appropriating construction funds on a year-to-year basis. That meant the district contracted for each segment of the center as a separate unit. One virtue of this procedure was that it allowed significant changes in construction plans without delaying the project. For instance, on July 17, 1962, NASA announced that the future Mission Control Center would be located at the center. This decision forced the Corps to insert an entirely new building into its master plan for the center.

The incremental funding system also allowed for major modifications of facilities already under construction. This was important because speed was essential if NASA's goals were to be met, and the engineers and NASA had to construct buildings at the same time that NASA was designing the laboratories and machines they would contain. Troubles with the Space Environment Simulation Chamber showed the value of the arrangement. The failure of the chamber during its first vacuum test required not only its redesign but also numerous changes in the one-third-completed building. Incremental funding enabled contract modifications to be made without necessitating major delays. In November 1966, after spending some \$75 million on the 1,600-acre project, Fort Worth District completed its work on what came to be called the Johnson Manned Spacecraft Center.

The Mobile District's involvement in NASA's rocket test program began with the transfer of the

Army Ballistic Missile Agency's Development Operations Division at the George C. Marshall Space Flight Center at Redstone Arsenal, Huntsville, Alabama, to NASA in 1959. NASA then established the Michoud Assembly Facility near New Orleans as a support facility for the Huntsville projects. Michoud was the assembly plant for the large Saturn booster rockets. In the fall of 1961, NASA established its test facility for the rockets assembled at Michoud on a 217-square-mile tract at the Mississippi Test Center, later the National Space Technology Laboratories, accessible from Michoud by both land and water. Mobile District spent more than \$200 million constructing space program facilities up to the completion of the test center in April 1966. The center's initial mission was to test the Apollo-Saturn V second stage booster and to test flight models of both the first and second stage boosters with thrusts of 7.5 million and 1 million pounds respectively. The site became NASA's principal test facility.

Canaveral District served as NASA's construction agent for the John F. Kennedy Space Center, Florida, particularly in the engineering and construction of the Apollo Launch Complex 39 and its related industrial area, as well as Saturn Launch Complexes 34 and 57. Because the rocket motor assemblies required for lunar missions were the largest yet built, construction of the launch facilities at Complex 39 was on an unprecedented scale. The district and its civilian contractors for the Apollo program designed and built the vehicle assembly building, a structure large enough to handle the completion of four 363-foot Apollo-Saturn V launch vehicles; a launch control center; three 46-story mobile launchers, weighing 10.5 million pounds each; a 40-story mobile services structure to permit work on vehicles at the launch pads; two

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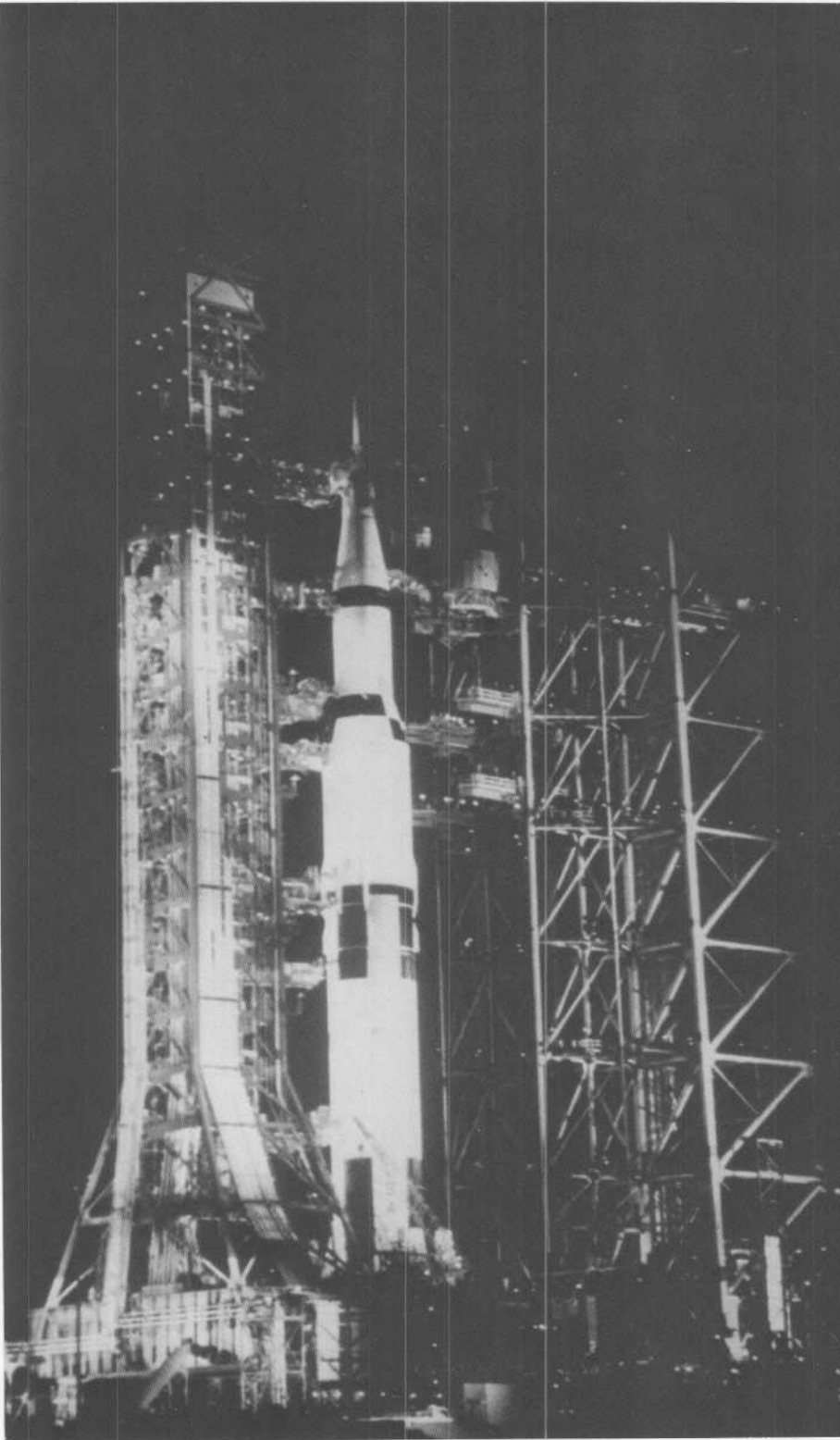


Space shuttle facility under construction, Vandenberg AFB, California.

Vehicle Assembly Building, Cape Kennedy.



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transporters for moving the launchers and service structure; a crawler-way road for the transporters; two launch pads, capable of withstanding the thrust from the Saturn V engines; and their integrating communications and electronics systems. The American Society of Civil Engineers recognized that work in 1966 with the selection of Complex 39 and its related facilities as the outstanding civil engineering achievement of the year.

Other Corps offices completed additional construction for NASA. For example, the New England Division selected the site for and supervised the construction of the Electronics Research Center in Cambridge, Massachusetts, in the late 1960s. That facility is now the Transportation Systems Center. In supervising a \$1 billion NASA construction effort, Corps offices in all parts of the country made major contributions to the national space effort.

Saturn 4B launching Apollo.